



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0713; Project Identifier AD-2021-00180-R; Amendment 39-21990; AD 2022-07-03]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Bell Textron Inc., Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for Bell Textron Inc., Model 412, 412EP, and 412CF helicopters. This AD was prompted by evaluation results showing flight loads that impact the collective lever fatigue life. This AD requires adding a permanent hours time-in-service (TIS) penalty for certain collective levers and prohibits installing those collective levers unless the permanent hours TIS penalty has been added. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Bell Textron, Inc., P.O. Box 482, Fort Worth, TX, 76101, United States; phone 1-450-437-2862 or 1-800-363-8023; fax 1-450-433-0272; email [productsupport@bellflight.com](mailto:productsupport@bellflight.com); or at <https://www.bellflight.com/support/contact-support>. You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

#### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0713; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket

contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Hye Yoon Jang, Aerospace Engineer, Delegation Oversight Section, DSCO Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5190; email [hye.yoon.jang@faa.gov](mailto:hye.yoon.jang@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Bell Textron Inc., Model 412, 412EP, and 412CF helicopters. The NPRM published in the *Federal Register* on August 27, 2021 (86 FR 48078). The NPRM was prompted by the results of an evaluation of BLR Aerospace Strake and FastFin (Strake and FF) system part number (P/N) 412-705-040-101. The NPRM stated that during the evaluation, additional flight loads were recorded that impact the collective lever fatigue life. Accordingly, the NPRM proposed to require adding a permanent life penalty for affected collective levers and prohibit installing those collective levers unless the permanent life penalty has been added. This condition, if not addressed, could result in fatigue damage and cracking, failure of the collective lever, and subsequent loss of control of the helicopter. The FAA is issuing this AD to address the unsafe condition on these products.

### **Discussion of Final Airworthiness Directive**

#### **Comments**

The FAA received comments from one commenter; Bell Textron, Inc. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request for a Change to Nomenclature**

Bell Textron, Inc., requested the FAA revise the penalty nomenclature from “life penalty” to “flight hour penalty” throughout the AD action. Bell Textron, Inc., stated that the penalty is only applied to hours TIS and that the life remains unchanged.

The FAA partially agrees. The FAA agrees to changing the nomenclature; however, the nomenclature typically used in rotorcraft FAA AD actions for domestic products is “hours TIS” (or “total hours TIS”) instead of flight hours (or total flight hours). The FAA has revised that nomenclature accordingly in this final rule.

### **Request for a Change to the Description of What Prompted this AD**

Bell Textron, Inc., requested the FAA clarify the description of what prompted this AD; specifically that during the evaluation, the additional flight loads that impact the collective lever fatigue life is for helicopters with the Strake and FF system installed.

The FAA agrees and has revised this final rule accordingly.

### **Request for Changes to the Preamble**

Bell Textron, Inc., requested the FAA make revisions to the Proposed AD Requirements in This NPRM section.

The FAA acknowledges this comment; however, because this section does not exist in a final rule after an NPRM, the commenter’s request does not apply.

Bell Textron, Inc., requested the FAA make revisions to the Differences Between This Proposed AD and the Service Information section.

The FAA acknowledges this comment; however, the specified difference has been deleted because of a certain other change. In light of this, the commenter’s request no longer applies.

### **Requests for Changes to the Notes**

Bell Textron, Inc., requested the FAA revise Note 1 to paragraph (g)(1)(i) to clarify that the specified serial-numbered helicopters require the flight hour (hours TIS) penalty after delivery.

The FAA partially agrees. The FAA agrees to clarify that the specified serial numbers are identified as needing the penalty applied. Accordingly, the FAA has revised Note 1 to paragraph (g)(1)(i) in this final rule to identify the specified serial numbers as

being originally delivered with a Strake and FF system installed and needing the flight hour (hours TIS) penalty on collective lever P/N 412-010-408-101 applied.

Bell Textron, Inc., requested the FAA delete Note 2 to paragraph (g)(1)(ii) because it would be redundant with incorporation of changes to the required actions it requested pertaining to helicopters with a Strake and FF system P/N 412-705-040-101 installed after delivery from the manufacturer.

The FAA agrees and has deleted Note 2 to paragraph (g)(1)(ii) in this final rule.

### **Requests for Changes to the Required Actions**

Bell Textron, Inc., requested the FAA make changes to the penalty calculation requirement for helicopters with a Strake and FF system P/N 412-705-040-101 installed after delivery from the manufacturer because the calculation needs to provide the remaining time for those affected collective levers.

The FAA agrees and has revised that requirement in this final rule.

Bell Textron, Inc., requested the FAA delete the penalty requirement for helicopters without a Strake and FF system P/N 412-705-040-101 installed because the evaluation results did not show grounds for a flight hour penalty for those helicopters, and according to Bell Textron, Inc., requiring the penalty would create unreasonable economic losses resulting from premature replacement of the collective lever.

The FAA agrees and has revised this final rule accordingly.

Bell Textron, Inc., requested the FAA revise the prohibition of installing a new (zero total hours TIS) collective lever P/N 412-010-408-101 to clarify that the prohibition requirement is for helicopters with a Strake and FF system P/N 412-705-040-101 installed because a penalty of 5,000 hours TIS is not justified for a new (zero total hours TIS) collective lever P/N 412-010-408-101 installed on a baseline configuration aircraft (without a Strake and FF system).

The FAA agrees and has revised this final rule accordingly.

Bell Textron, Inc., requested the FAA delete the prohibition of installing a used collective lever P/N 412-010-408-101 due to flight evaluation results that do not support flight hour penalty to the collective lever PN 412-010-408-101 on a baseline configuration.

The FAA agrees and has revised this final rule accordingly.

## **Conclusion**

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

## **Related Service Information**

The FAA reviewed Bell Helicopter Alert Service Bulletin 412-12-151, Revision A, dated July 8, 2014. This service information specifies procedures for adding a permanent flight hour (hours TIS) penalty for collective levers installed or previously installed on helicopters with a Strake and FF system P/N 412-705-040-101.

## **Differences Between This AD and the Service Information**

The service information specifies adding the permanent life penalty at the next scheduled inspection, whereas this AD requires that action within 50 hours TIS after the effective date of this AD instead.

## **Costs of Compliance**

The FAA estimates that this AD affects 96 helicopters of U.S. registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Replacing a collective lever takes about 2 work-hours and parts cost about \$18,237, for an estimated cost of \$18,407 per helicopter and up to \$1,767,072 for the U.S. fleet.

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-07-03 Bell Textron Inc.:** Amendment 39-21990; Docket No. FAA-2021-0713; Project Identifier AD-2021-00180-R.

**(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bell Textron Inc., Model 412, 412EP, and 412CF helicopters, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC) Code: 2700, Flight Control System.

**(e) Unsafe Condition**

This AD was prompted by evaluation results showing flight loads that impact the collective lever fatigue life on helicopters with a BLR Aerospace Strake and FastFin (Strake and FF) system installed. The FAA is issuing this AD to prevent fatigue damage and cracking, which could result in failure of the collective lever and subsequent loss of control of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) Within 50 hours time-in-service (TIS) after the effective date of this AD:

(i) For helicopters with a Strake and FF system part number (P/N) 412-705-040-101 installed since initial delivery from the manufacturer, add a permanent penalty of 5,000 hours TIS to the total hours TIS indicated on the component history card or equivalent record for the collective lever P/N 412-010-408-101.

Note 1 to paragraph (g)(1)(i): Bell Helicopter service information identifies helicopters with serial numbers 36570, 36579, 36587, and 36593 through 36602 inclusive, as being originally delivered with a Strake and FF system installed and needing the flight hour (hours TIS) penalty on collective lever P/N 412-010-408-101 applied.

(ii) For helicopters with Strake and FF system P/N 412-705-040-101 installed after delivery from the manufacturer, calculate the TIS penalty for collective lever P/N

412-010-408-101 by accomplishing the following:

(A) Verify the component history card or equivalent record of the collective lever and note the total hours TIS.

(B) Determine the remaining hours TIS by subtracting the total hours TIS of the collective lever from its life limit of 10,000 total hours TIS.

(C) Divide the remaining time by 2 and add that number to the existing total hours TIS. This is the new total TIS after being penalized.

(D) Enter the new total TIS after being penalized from paragraph (g)(1)(ii)(C) of this AD to the component history record or equivalent record for the collective lever.

(2) Before further flight, remove from service any collective lever P/N 412-010-408-101 that has reached or exceeded its life limit of 10,000 total hours TIS. Thereafter, remove from service each collective lever P/N 412-010-408-101 on or before reaching its life limit of 10,000 total hours TIS.

(3) As of the effective date of this AD, do not install a new (zero total hours TIS) collective lever P/N 412-010-408-101 on any helicopter with Strake and FF system P/N 412-705-040-101 installed unless a penalty of 5,000 hours TIS has been added to the total hours TIS on its component history card or equivalent record.

(4) As of the effective date of this AD, do not install a used collective lever P/N 412-010-408-101 on any helicopter with Strake and FF system P/N 412-705-040-101 installed unless a penalty is calculated by accomplishing the actions required in paragraph (g)(1)(ii) of this AD.

**(h) Special Flight Permits**

Special flight permits are prohibited.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, DSCO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this



AD. Information may be emailed to: 9-ASW-190-COS@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

For more information about this AD, contact Hye Yoon Jang, Aerospace Engineer, Delegation Oversight Section, DSCO Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5190; email [hye.yoon.jang@faa.gov](mailto:hye.yoon.jang@faa.gov).

**(k) Material Incorporated by Reference**

None.

Issued on March 16, 2022.

Derek Morgan, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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